

REMARKS

Following the amendments requested above, the claims in this application are claims 1-7, 9-20, 26-38, and 41-63.

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AMENDMENTS

In the Specification

10 Page 10 has been further amended so as to remove the references therein to "at least 2%" and "at least 0.5%", and to include a reference to "0.1 to 12%". Basis for the amendment to page 9 will be found in the corresponding paragraph of the original specification and column 3, lines 19-22, of Morawsky U.S. Patent No. 5,736,125, which is incorporated by reference.

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In the Claims

 Claim 21, requiring that the amount of the SCC polymer is at least 2%, has been canceled. Claim 57, dependent on Claim 21 but requiring that the amount of the SCC
20 polymer is 2 to 7%, has been rewritten in independent form. Claims 22, 39 and 40, dependent on Claim 21, have been made dependent on Claim 57. Claim 31, requiring that the amount of the SCC polymer is at least 0.5%, has been amended to specify that the amount of the SCC polymer is 0.5 to 5%. As a result, there are no claims stating that the amount of thickening agent is at least 2% or at least 0.5 %. Claim 62 and 63,
25 dependent on Claim 21 and 20 respectively, have been added, and specify that the quantity of the thickening agents is 0.1 to 12%.

 Basis for new Claim 62 and 63 will be found on page 3, line 22, and Claim 6 of Morawsky U.S. Patent No. 5, 736,125, which is incorporated by reference. The
30 presence of Claim 62 and 63 makes it clear (through the doctrine of claim

differentiation) that claims 1 and 20 include any amount of the SCC polymer that causes thickening of the oil.

THE OBJECTIONS AND REJECTIONS

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The Objection under 35 U.S.C. 132.

The objection under 35 U.S.C. 132 has been rendered moot by the amendments to the specification.

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The Rejections under 35 U.S.C. 112

The rejections under 35 U.S.C. 112 have been rendered moot by the amendments to the claims.

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The Rejections under 35 U.S.C. 102 and 35 U.S.C. 103

Applicants respectfully traverse

(1) the rejection of claims 1-7 , 9-12, 20, 37 and 38 under 35 U.S.C. 102 as anticipated by Mueller (U.S. Patent No. 5,281,329) with Morawsky (U.S. Patent No. 5,736,125) as a teaching reference, and

(2) the rejection of claims 1-6, 9-12, 20, 32-38, 43 and 44 under 35 U.S.C. 103 as unpatentable over Mueller in view of Morawsky, insofar as those rejections can be understood, for the following reasons.

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Initially it is noted that Claims 6 and 7, which were previously rejected only on double patenting grounds, are now also rejected under 35 U.S.C. 102, and that Claim 6 (but not Claim 7) is now rejected under 35 U.S.C. 103. Claims 6 and 7 require the presence of hydroxyl groups in the SCC polymer (as further specified in the claims).

30 There is nothing in Mueller to suggest the use of hydroxyl-containing SCC polymers, and the Office Action says nothing about this difference. It seems possible, therefore,

that the rejections of Claim 6 and 7 under 35 U.S.C. 102 and of Claim 6 under 35 U.S.C. 103 are the result of clerical errors.

The Rejection under 35 U.S.C. 102

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It is well-settled law that a rejection under 35 U.S.C. 102 must be based upon a single reference disclosing every feature of the rejected Claim. Applicant does not understand what is meant by the words "with Morawsky... as a teaching reference", but believes that Morawsky cannot be relevant to a rejection under 35 U.S.C. 102 over
10 Mueller.

Mueller is concerned with improving the flow characteristics of petroleum oils and petroleum oil products containing paraffins which influence the flow characteristics of the oils at lower temperatures. The paraffins dissolve in the oil at higher temperatures,
15 but crystallize out on cooling, and in this way, "the ability of the oils to flow is lowered or entirely prevented" (column 1, lines 14-19). Thus, as the temperature falls, crystallization of the paraffins begins at the "wax appearance point" or "cloud point" (column 2, lines 5-14), and as the temperature continues to fall, the viscosity of the oil rises until, at a temperature called the pour point, the oil will no longer flow. Mueller refers to the known
20 polymeric flow improvers, for example the so-called 'pour point depressants' (column 1, lines 20-21), including long chain alkyl (meth)acrylates (i.e. SCC polymers). Mueller's invention is to provide an "outstanding flow improving effect" (column 4, line 35) by dissolving into the oil an additive which is a mixture of (i) a first relatively high-melting polyalkyl acrylate or polyalkyl methacrylate (onset of crystallization greater than 15 °C)
25 and (ii) a second relatively low-melting polyalkyl acrylate or polyalkyl methacrylate (onset of crystallization equal to or less than 15 °C and at least 5 °C less than the onset of crystallization of the first SCC polymer). The polyalkyl acrylates and methacrylates disclosed by Morawsky are SCC polymers that do not contain carboxyl (or other functional) groups. The quantity of the additive is very small. A range of 1-10,000 ppm
30 (0.001-1%) is given, with a preferred range of 0.005-0.2%. In Mueller's Examples, the amounts used are 4-1,000 ppm (0.004-0.1%).

For the reasons set out in detail in the previous response, there can be no doubt that Mueller's additive (i.e. the defined mixture of SCC polymers), when used in accordance with Mueller's instructions, functions as a thinner in the temperature range
5 between (i) the pour point of the oil and (ii) the pour point of the mixture of oil and additive. Nor is there any reason to suppose that the same is not true at higher temperatures.

Column 3, line 60, to column 4, line 4, of Mueller states that the petroleum oils
10 and petroleum oil fractions that can be improved by the invention are predominantly crude oils, vacuum gas oils and residual oils. The compositions disclosed in Mueller's Examples are all based on crude oils. There is no explicit reference in Mueller to cosmetic compositions. Nor is there any disclosure in Mueller of any composition that is inherently a cosmetic composition. Nor is there any suggestion in Mueller that his
15 compositions can be cosmetic compositions. Only a very small proportion of oil-containing compositions are "cosmetic compositions" as defined by the Food, Drug and Cosmetic Act, since the great majority of oil-containing compositions are not intended to be "rubbed, poured, sprinkled, or sprayed on, introduced into, or otherwise applied to the human body... for cleansing, beautifying, promoting attractiveness, or altering the
20 appearance". Certainly none of the specific compositions disclosed in Mueller are cosmetic compositions

The differences between the rejected claims 1-5, 9-12, 20, 37 and 38 and Mueller can be summarized as follows.

1. In the rejected claims, the SCC polymer must be present **in an amount**
25 **such that it thickens the oil.**
2. The rejected claims are directed to **cosmetic** compositions.

Difference 1

30 Mueller uses his mixture of SCC polymers in amounts which do not thicken the oil. On the contrary, Mueller's additive is used as a pour point depressant.

The additive-containing composition has a lower viscosity, at temperatures between (i) the pour point of the oil and (ii) the pour point of the mixture of oil and additive, than the composition not containing the additive. In other words, Mueller's additive acts as a thinner, not a thickener. There is no reason to suppose, reading Mueller, that there are any circumstances under which Mueller's additive will thicken the oil. When Mueller's compositions are at a temperature below the pour point of the mixture, they cannot be poured, i.e. are solid. They are solid because of the low temperature, not because they have been thickened by the mixture of SCC polymers. However, in order to eliminate any possibility that Mueller's compositions, when they are at a temperature below the pour point of the mixture, can be regarded as within the scope of independent claims 1 and 20 (and the claims dependent thereon), those claims further require that the composition is at a temperature at which the composition, in the absence of the SCC polymer, is liquid.

15 Difference 2

In the Office Action, the Examiner has stated

(a) that the fact that the claims are directed to cosmetic compositions has no patentable significance, and

20 (b) that "mineral oil and vaseline oil are cosmetic compositions and they are petroleum oil fractions, which are part of the invention of Mueller".

It is well-settled law that every feature of a Claim, especially a feature added to the Claim during prosecution to distinguish from the prior art, is relevant to the construction of the Claim, and, therefore, its patentability. Applicants do not understand, therefore, why the Examiner thinks that the limitation of the rejected claims to cosmetic compositions should be ignored.

The statement that "mineral oil and vaseline oil are cosmetic compositions and they are petroleum oil fractions, which are part of the invention of Mueller" could be read as implying that mineral oil and vaseline oil are disclosed in Mueller, which is not

correct. Mueller does indeed disclose petroleum oil fractions, and mineral oil and vaseline oil are indeed petroleum oil fractions. But mineral oil and vaseline oil represent a very small proportion of all petroleum oil fractions, and are not disclosed by Mueller. The Examiner has not advanced any reason for supposing that one skilled in the art, reading Mueller, would consider the possibility that Mueller was referring to mineral oil and vaseline oil as possible petroleum oil fractions. But even supposing that to be the case, there is still no disclosure or suggestion in Miller of a cosmetic composition. It is true that some cosmetic compositions contain mineral oil and vaseline oil. But it is also true that many compositions containing mineral oil and vaseline oil are not cosmetic compositions.

As noted previously, it appears possible that the rejection of Claim 6 and 7 under 35 U.S.C. 102 was the result of a clerical error. However, for the sake of completeness, it is noted that Claim 6 and 7 require the use of a hydroxyl-containing SCC polymer (as further specified in the claims), and that there is nothing in Mueller to suggest the use of such a polymer. It is believed to be clear that, having regard to this difference, the rejection of claims 6 and 7 under 35 U.S.C. 102 over Mueller must be withdrawn.

The Rejections under 35 U.S.C. 103

The rejections under 35 U.S.C. 103 are based on Mueller in view of Morawsky. This is a new rejection, although Morawsky is already of record, being referred to in the specification itself and being one of the documents listed in the Information Disclosure Statement filed with the application.

It is well-settled law that a rejection cannot properly be based on a combination of references unless there is some reason to read the references together. As the MPEP puts it in 2143.01

First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings.

As the CAFC put it in ACS Hospital Systems vs. Montefiore, 221 USPQ 929

*Obviousness cannot be established by combining the teachings of the prior art to produce the claimed invention, absent some teaching or suggestion supporting the combination. Under Section 103, teachings of references can be combined **only** there is some suggestion or incentive to do so.*

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The Examiner has not given any reason for combining the references. Nor is there in fact any such reason. On the contrary, there are positive reasons why the references would **not** be read together. Mueller is directed to **reducing** the thickness of certain oil-containing compositions. Morawsky has an opposite objective, namely **increasing** the thickness of certain oil-containing compositions. Morawsky requires the use of SCC polymers containing carboxyl groups. There is no disclosure of such SCC polymers in Mueller. Without knowledge of the present invention, therefore, there is no reason to read Mueller and Morawsky together.

15 Even if, which is denied, the references can properly be combined, the combination of them does not disclose the claimed invention, since Morawsky requires the use of SCCP additives containing carboxyl groups. Such additives are excluded from the claims. Thus the combination of the references fails the requirement set out in MPEP 2143.01 that

20 *the prior art reference (or references when combined) must teach or suggest all the claim limitations.*

The Office Action, in support of the rejection under 35 U.S.C. 103, states
25 *Morawsky shows "that the concentration range at which an SCCP thickens oil is from about 0.1% to about 12%. This overlaps the concentration range of 0.001 to 1% claimed by Mueller. This makes the argument about pour point depressants being viscosity depressants moot.*

The first sentence of this statement is factually incorrect. Morawsky is not
30 concerned with SCC polymers in general. Morawsky discloses only that **certain specifically defined carboxyl-containing** SCC copolymers (as defined, for example, in Claim 1 of Morawsky) can be used to thicken oils. Nor does Morawsky "show" that any SCC polymer, even the specifically defined carboxyl-containing SCC copolymers, thickens oils at all concentrations from about 0.1% to about 12%. Nor does Morawsky
35 state that SCC polymers, even the specifically defined carboxyl-containing SCC

copolymers, will thicken oils **only** at concentrations of 0.1 to 12%. Morawsky says that his carboxyl-containing copolymers should be used **"in an amount sufficient to thicken the composition to the desired thickness"** (col. 3, lines 19-21); and that the amount is "in general... from about 0.1% to about 12%, preferably about 0.5 to about 10%, by weight of the oil" (col. 3, lines 21-24).

Morawsky's specific Examples, which no doubt report the best method known to Morawsky of carrying out the invention, make it clear that Morawsky does not provide any teaching of useful compositions at the lower end of the range of 0.1 to 12%. Thus, the amounts used in Morawsky's specific Examples range from 2.5 to 5%. Morawsky's specific Examples also demonstrate the importance of

- (i) the presence of the carboxyl groups on the SCC polymer, and
- (ii) using a sufficient quantity of the SCC polymer.

Example 1 uses five different SCC copolymers, each in amount 5% based on the weight of the oil. Even at this concentration (50 times the low end of the 0.1 to 12% range), one of the carboxyl-containing copolymers (Sample 124-93, containing 4 % of acrylic acid) produced only a very small increase in viscosity. The other SCC copolymers in Example 1 contained 5-10% of acrylic or methacrylic acid, and produce substantially greater increases in viscosity. Sample 124-194, containing 7.5 % of methacrylic acid, was the most effective thickening agent. In Examples 2, 3 and 4, Sample 124-194 was used in amount about 2.5%, about 4% and about 3.3% respectively, based on the oil, to produce compositions whose viscosities were less than 1/10, a little more than 1/3, and a little more than 1/5, respectively, of the viscosity of the composition produced by the same SCC polymer at 5 % in Example 1.

[It should be noted that in an earlier Reply, Applicant stated that Morawsky uses, in his specific Examples, 1 to 2.5% of the SCC polymer. That was incorrect.]

The Examiner is correct stating that Mueller claims a concentration range of 0.001 to 1%, based on the weight of the oil, and is also correct, on a strictly arithmetical basis, that this range overlaps the range of 0.1 to 12% disclosed by Morawsky.

However, this needs to be viewed in the context of the Mueller and Morawsky specifications as a whole. Thus, Mueller discloses a preferred range of 0.005 to 0.2% and in fact uses, in the specific Examples, 0.04 to 0.1%, and Morawsky discloses a preferred range of 0.5 to 10%, and in fact uses 2.5 to 5%

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It appears that the Examiner is arguing that, because the broadest concentration ranges disclosed in Mueller and in Morawsky overlap, it is not important that

- (1) Mueller and Morawsky are concerned with different SCC polymers,
- (2) Mueller's objective is to reduce the thickness of oils, and Morawsky's
- 10 objective is to increase the thickness of oils, and
- (3) there is no overlap in the preferred concentration ranges, and there is a large gap between the highest concentration used by Mueller and the lowest concentration used by Morawsky in their respective specific Examples.

Applicants, however, believe that these differences are extremely important, and that in
15 view of them, the rejection under 35 U.S.C. 103 should be withdrawn. The following points in particular should be noted.

1. There is nothing in the references, or elsewhere in the prior art, to suggest that the mixture of SCC polymers used by Mueller is interchangeable with the carboxyl-
20 containing SCC polymers used by Morawsky.

2. Mueller's objective is a reduction in the pour point of certain oils. As noted previously, a reduction in the pour point of an oil necessarily also means a reduction in the thickness of the oil. There is nothing in Mueller to suggest that his mixture of SCC
25 polymers will, under any circumstances, produce the opposite result, namely an increase in the thickness of the oil.

3. Morawsky's objective is an increase in the thickness of the oil. There is nothing in Morawsky to suggest that his carboxyl-containing SCC polymers will, under any
30 circumstances, produce the opposite result, namely a decrease in the thickness of the oil.

4. Although there is, mathematically speaking, an overlap between the concentration ranges of 0.1-12% and 0.001-1%, these ranges cannot be removed from the context of the references in which they appear. The references, read as a whole,
5 make it clear that in the quantities stated to be preferred, and in the quantities for which there is any experimental verification, the amounts used by Mueller (0.004-0.1%) are completely different from the amounts used by Morawsky (2.5-5%).

The Provisional Double Patenting Rejection

10 Applicants will address the issues raised by the provisional double patenting rejection when the claims of this application and Application Serial No. 09/398,377 are otherwise in condition for allowance.

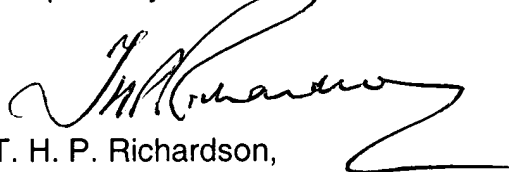
15 Previously-Filed Petition To Add Additional Priority Claim

Noting the Examiner's comment that he does not handle petitions, attached is a Status Inquiry which the Examiner is asked to forward to the Petition Branch.

20 CONCLUSION

It is believed that this application is now in condition for allowance, and such action at an early date is earnestly requested. If, however, there are any outstanding issues that could usefully be discussed by telephone, the Examiner is asked to call the
25 undersigned.

Respectfully submitted,



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CROSS-REFERENCE TO RELATED APPLICATIONS

5 [0001] This invention is a continuation-in-part of copending, commonly assigned Application Serial No. 09/398,377, filed Sept. 17, 1999, by Steven P. Bitler. The entire disclosure of that application is incorporated herein by reference for all purposes. This application also claims priority from International Application No. PCT/U.S. 00/40780, filed August 30, 2000.

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BACKGROUND OF THE INVENTION

Field of the Invention

15 [0002] This invention relates to polymeric thickeners for oil-containing compositions.

Introduction to the Invention

[0003] U.S. Patent Nos. 4,057,622, 4,057,623, 4,057,624, 5,318,995, 5,519,063
20 and 5,736,125 disclose the possibility of thickening oil-containing compositions with certain polymers containing (a) lipophilic groups (e.g. in units derived from long chain n-alkyl acrylates) and (b) certain other groups, namely amido groups (in units derived from acrylamide), pyrrolidino groups (in units derived from N-vinyl pyrrolidone), imidazole groups (in units derived from N-vinyl imidazole), carboxylic acid and
25 carboxylic acid salt groups (e.g. in units derived from acrylic or methacrylic acid), sulfonic acid groups, and sulfonic acid salt groups. Japanese Kokai No. 4-10054 discloses non-aqueous compositions containing (A) a fluoropolymer containing a perfluoroalkyl group and an alkyl group, either or both of which may be a long chain group, (B) a liquid perfluoroalkyl organic compound, and (C) an oil.

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